

2005-152004

Commercial Air Conditioners 2020



Commercial Air Conditioner Division
Midea Group

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Note: Product specifications change from time to time as product improvements and developments are released and may vary from those in this document.



Split Commercial A/C

R410A 50/60Hz





Midea CAC

Midea CAC is a key division of the Midea Group, a leading producer of consumer appliances and provider of heating, ventilation and air conditioning solutions. Midea CAC has continued with the tradition of innovation upon which it was founded, and emerged as a global leader in the HVAC industry. A strong drive for advancement has created a groundbreaking R&D department that has placed Midea CAC at the forefront of a competitive field. Through these independent efforts and joint cooperation with other global enterprises, Midea has supplied thousands of innovative solutions to customers worldwide.

There are four production bases: Shunde, Chongqing, Hefei and Italy.

MCAC Shunde: 38 product lines focusing on VRF, Split Products, Heat Pump Water Heaters, and AHU/FCU.

MCAC Chongqing: 14 product lines focusing on Water Cooled Centrifugal/Screw/Scroll Chillers, Air Cooled Screw/Scroll Chillers and AHU/FCU.

MCAC Hefei: 11 product lines focusing on VRF, Chillers and Heat Pump Water Heaters.

Clivet S.p.A: 50,000m² workshop in Feltre and Verona, covering products such as ELFO system, hydronic, WHLP, packaged, split and close control and so on.

- 2020 >> A new generation 3-pipe heat recovery VRF will be launched in the middle of 2020.
- 2018-2019 >> Launched the All DC Inverter Cooling Only VC Pro VRF, ultra cool for hot regions
- 2017-2018 >> Launched the new generation VRF globally, leading in VRF market
- 2016 >> Acquired 80% stake in Clivet
- 2014-2015 >> Win FIFA World Cup Stadiums project in Brazil Beira Rio, Olympic Games Stadiums project in Brazil Rio de Janeiro and Africa games Stadiums project in Congo Brazzaville successively
- 2014 >> Launched the All DC Inverter V5X globally, outstanding product performance helps Midea leading VRF market
- 2011-2014 >> Launched the DC Inverter V4 Plus Series successively, complete product lines help Midea successfully enter the mainstream VRF market
- 2011-2012 >> J.V. with Carrier LA and Carrier India successively
- 2009 >> Launched the DC Inverter V4 globally
- 2008 >> Developed DC inverter technology with Toshiba
- 2000-2001 >> Cooperated with Toshiba and Copeland, enter VRF field
- 1999 >> Entered the CAC field

MCAC Learning Academy



Objective

Midea CAC Learning Academy aims to provide training to the sales personnel as well as technical personnel in order to increase the utilization for your Midea CAC equipment. Once you have purchased equipment from Midea CAC, taking care of the equipment is topmost priority. Midea CAC Learning Academy offers training courses to learn firsthand from the manufacturer what it takes to get the best out of your Midea CAC product. The goal of Midea CAC Learning Academy is to provide product specific training, safe work procedures and expertise in carrying out the installation and maintenance of Midea CAC products as well as teaching the main selling points in order to help the sales people sell the Midea CAC products with ease.

Training Centers

Our world class training centers provide knowledge and skills necessary to efficiently deploy Midea CAC technologies. The training centers include dedicated laboratories to provide hands-on experiences with various systems, components and controls to refresh and enhance the skills of your sales, design and installation and service teams. Right now we operate our trainings from the below two locations:

1. Midea CAC Training Center

Address: Midea CAC Training Center, 2nd Floor, Building 6, Midea Global Innovation Center, Beijiao, Shunde, Foshan, China
Pin- 528311

The Midea CAC Training Center is situated 30 kilometers from Baiyun Guangzhou International Airport.

Products: VRF, M-Thermal

2. Chongqing Midea Training Center

Address: No. 15, Qiangwei Road, Nan'an District, Chongqing, China

Chongqing Midea Training Center is 35 kilometers from Chongqing International Airport.

Products: Centrifugal Chiller, Screw/Scroll Chiller and Terminals



VRF training



M-Thermal training



Chiller training

Global Technical Trainings

The training courses by Midea CAC Learning Academy are divided into the following two categories with different targeted audiences for each.

Design and Application Trainings: The design and application trainings for various products are basically for the sales personnel selling Midea CAC products in order to give them basic understanding about the main features. The trainings are conducted on a global level inviting sales engineers, technical engineers, consultants and project designers from different parts of the world.

Main Courses Offered:

1. Introduction to main Selling points and Features
2. Installation and Commissioning
3. Control Systems
4. Selection Software



Products: VRF, M-Thermal, Chillers and Terminals

After Sales- Service Trainings: These trainings are dedicated for the After Sales/ Service personnel in order for them to better carry out the installation, commissioning and maintenance of Midea CAC products. Technical person and engineers from different parts of the world are invited to take part in these trainings.

Main Courses Offered:

1. Product Electric Control and Refrigerant System
2. Control Systems
3. Installation and Commissioning Demonstration
4. Troubleshooting and Maintenance

Products: VRF, M-Thermal, Chillers and Terminals

Highly Skilled Trainers: The trainers for various courses by Midea CAC Learning Academy are expert people with vast experiences in their field. Most of them have a deep insight about the global HVAC market and help the attendees to better understand the CAC products.

Training Certificates:

The attendees for Global trainings are provided a training certificate highlighting the courses discussed in the training, signed by Mr. Jason Zhao, General Manager of Midea CAC Overseas Sales Company.

Registration:

You can contact your respective Midea contact point to provide you with the complete schedule about the global technical trainings as well as how to register for these trainings.



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Introduction

Midea split type air conditioners are designed and manufactured to meet the requirements of the home, office, hotel and others public occasion use. The units are completely assembled, internally wired, charged outdoor unit with refrigerant at the factory.

DX AHU (Air Handler Unit) Series

Application	Power supply	Series	Nominal cooling capacity (kBtu/h)			
			36	60	90	120
R410A T3	220-240V, 1Ph~, 50Hz	Indoor units (DX AHU)	○	○		
	220-240V, 1Ph~, 50Hz	Outdoor units	○			
	380-415V, 3Ph~, 50Hz		○	○		
R410A T1	220V, 3Ph~, 60Hz	Indoor units (DX AHU)			○	○
	208~230V, 3Ph~, 60Hz	Outdoor units			○	○

Notes:

1. Product's cooling capacity as per specification.

New DC Inverter Conventional Split A/C Series

Application	Power Supply	Series	Nominal Cooling Capacity (kBtu/h)				
			38	48	76	96	
R410A T1 (DC Inverter) (Heat Pump)	220-240V, 1Ph~, 50Hz	Indoor units	Medium static pressure duct indoor unit				○
			High static pressure duct indoor unit				○
			Floor standing indoor unit				○
			Four-way cassette indoor unit		○		
	380-415V, 3Ph~, 50Hz	Outdoor units			○	○	
R410A T1 (DC Inverter) (Cooling Only)	220-240V, 1Ph~, 50Hz	Indoor units	Medium static pressure duct indoor unit			○	○
			High static pressure duct indoor unit			○	○
			Floor standing indoor unit			○	○
			Four-way cassette indoor unit	○	○		
	380-415V, 3Ph~, 50Hz	Outdoor units			○	○	
	220-240V, 1Ph~, 60Hz	Indoor units	Medium static pressure duct indoor unit			○	○
			High static pressure duct indoor unit			○	○
			Floor standing indoor unit			○	○
Four-way cassette indoor unit			○	○			
380-415V, 3Ph~, 60Hz	Outdoor units			○	○		

Normal Conventional Split A/C Series

Application	Power Supply	Series	Nominal Cooling Capacity (kBtu/h)							
			76	96	120	150	180	192	240	
R410A T1 (Heat Pump)	220-240V, 1Ph~, 50Hz	Indoor Units	Medium static pressure duct indoor unit	○		○				
			High static pressure duct indoor unit	○			○		○	
			Floor standing indoor unit	○						
	380-415V, 3Ph~, 50Hz	Outdoor units	○		○	○			○	
R410A T1 (DC Inverter) (Heat Pump)	220-240V, 1Ph~, 50Hz	Indoor units	○	○						
	380-415V, 3Ph~, 50Hz	Outdoor units	○	○						
R410A T3 (Cooling Only)	220-240V, 1Ph~, 50Hz	Indoor units	Medium static pressure duct indoor unit	○	○	○	○			
			High static pressure duct indoor unit	○	○					
			Floor standing indoor unit	○	○	○				
	380-415V, 3Ph~, 50Hz	Outdoor units	○	○	○					
	208~230V, 1Ph~, 60Hz	Indoor units	Medium static pressure duct indoor unit		○	○		○		○
			Floor standing indoor unit		○					
208~230V, 3Ph~, 60Hz	Outdoor units		○	○						
R410A T3 (Heat Pump)	220-240V, 1Ph~, 50Hz	Indoor units	Medium static pressure duct indoor unit	○	○	○				
			High static pressure duct indoor unit	○	○					
			Floor standing indoor unit	○	○					
	380-415V, 3Ph~, 50Hz	Outdoor units	○	○	○					

Notes:

1. Product's cooling capacity as per specification.

General Features



 R410A

General Features for Normal Conventional Split A/C Series

Convenient for unit selection

General

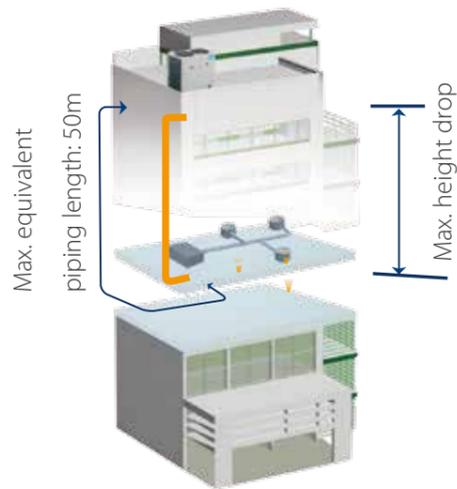
Features for Normal Conventional Split A/C Series

Wide cooling capacity range

- ❖ Wide cooling capacity range. The duct type split A/C is from 76,000Btu/h to 240,000Btu/h.

Long piping length

- ❖ Max. equivalent piping length is 50m. The outdoor unit can be installed at any ventilation locations. (Unavailable for AHU type)



		Permitted value
Max. Equivalent piping length		50 m
Max. height drop between indoor and outdoor unit	Outdoor unit up	25 m
	Outdoor unit down	30 m

Outstanding reliability

Durable construction

- ❖ Pre-painted exterior cabinet panels pass 1000 hours Salt Spray Test for durability.
- ❖ Weather-resistant construction with capped steams and sloped top panels.
- ❖ G90 galvanized heavy gauge plate conforming to ASTM-A-653.



Anti-corrosion treatment as optional

- ❖ The large split air conditioners with special anti-corrosion treatment are suitable for seaside areas or the areas exposed to acidic substances.



- ❖ Special anti-corrosion treatment of heat exchanger provides 5 to 6 times greater resistance against acid rain and salt corrosion.
- ❖ All PCB parts in the unit are coated with double-side moisture proof paint. The outer side of electric box metal cover is spray-painted.
- ❖ All screws are anti-rust.
- ❖ Casings of the unit and motors are anti-rust.

Reliable scroll compressor

- ❖ Famous brand compressor: Hitachi, Danfoss, etc. More reliable.
- ❖ No complex internal suction and discharge valves for quieter operation and higher reliability.
- ❖ Compact, light-weight design, and fewer moving parts design.



Multi-protection design

- ❖ Multi-measurement to ensure units operate normally and reliably: System current protection, High/low pressure switch protection, Temperature sensor on/off protection, etc.
- ❖ Three-phase protector is optional.



HP/LP switch



Temperature sensor

Easy for installation

- ❖ Units are completely assembled, internally wired, charged outdoor unit with refrigerant at the factory.
- ❖ The site work only needs to connect refrigerant pipes and communication wires between outdoor unit and indoor unit.

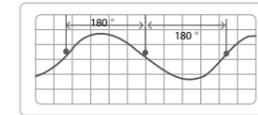
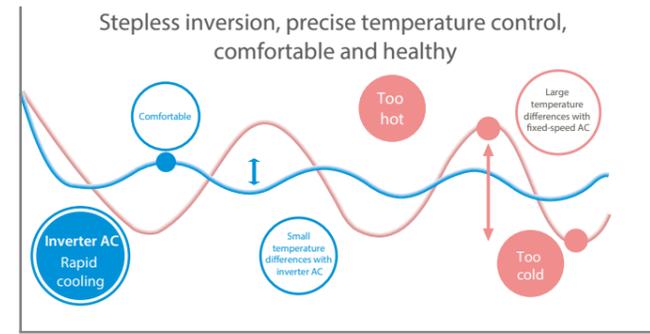


- Liquid pipe
- Gas pipe
- Connecting cable

General Features for New DC Inverter Conventional Split A/C Series Outdoor Unit

DC inverter technology, precise temperature control

The DC inverter compressor system reaches full load rapidly providing less temperature fluctuation and improved living environment.



DC inverter technology
New generation 180° sine wave drive technology, higher energy efficiency



Compressor seamless inverter main board
Wider inverter range control



High-precision EXVs
Each EXV part achieves **480 pulse rate** to precisely adjust refrigerant flow



High-precision temperature sensor
It can react to temperature fluctuations with a precision of **0.5°C**.

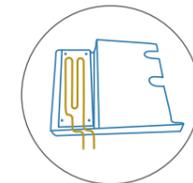
Refrigerant cooling PCB

The outdoor unit uses refrigerant cooling technology to cool the electric control box guaranteeing the stable and safe running of the control system.

It improves the high temperature cooling capabilities, resulting in a system that can provide powerful cooling in 55°C environment, with increased high temperature cooling efficiency of 15~20%, rapidly cools in high temperature environments, with a temperature drop rate that is 5-10% faster than that of conventional ACs.



* The above data was cited from a nationally accredited laboratory.



Liquid cooling is more efficient, allowing it to function in high temperature environments and making it more adaptable to high-temperature urban environments.

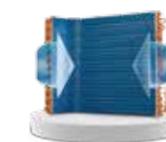
Brand name components, smart manufacturing, professionalism, and premium quality

Combines a variety of multi-core components such as brand name DC inverter compressors, high efficiency heat exchanger, and a high functionality motor. This ensures that the system is high quality, energy-saving, quiet, and durable.



Compressor of renowned brand

Utilizes brand name high-efficiency DC inverter compressor for powerful operation that is more energy efficient and stable.



Efficient Heat Exchanger

Features an overlapping multiple-outlet route design, distributing the flow of air more evenly, delivering higher heat transfer and increased efficiency.



High functionality motor

Utilizes new manufacturing technology and materials to effectively mitigate wear and tear and improve operating efficiency.



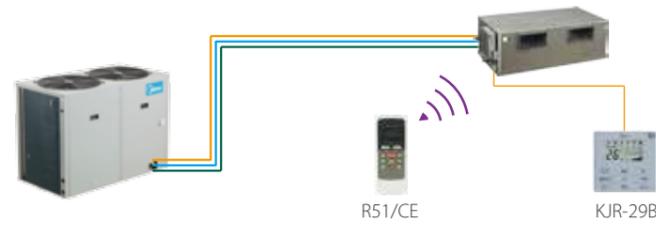
Quiet fan blades

The structure of this unit's fan blades has been optimized using CFD technology, reducing the electric motor's energy consumption and operating noise.

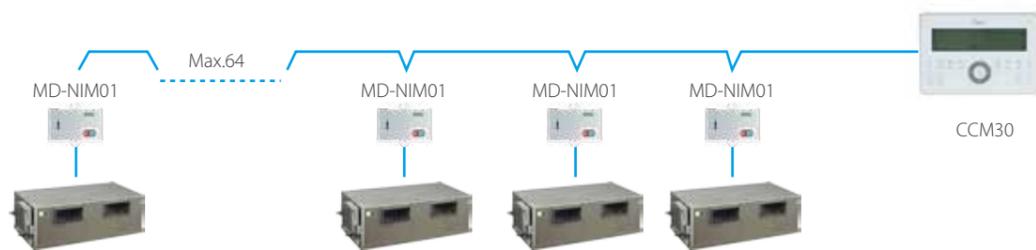
Flexible choice of accessories

Controllers

- ❖ Wireless remote controller is available for conventional split A/C series.
- ❖ Wired controller can be directly connected to indoor units.



- ❖ Centralized control function can be achieved through the centralized controller as optional. MD-NIM01 should be connected between the indoor units and centralized controller.



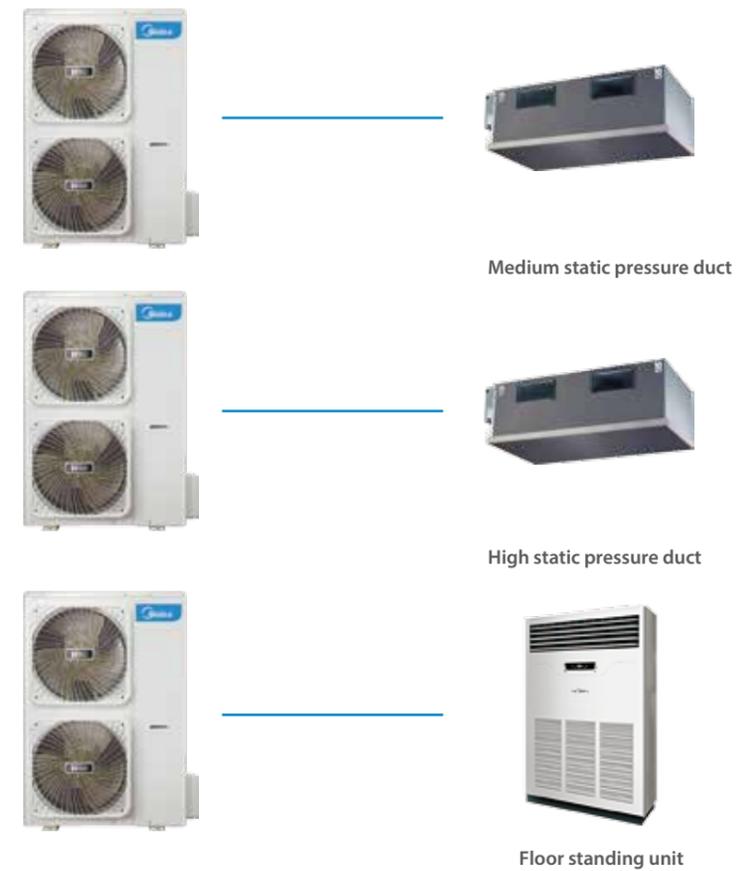
Notes: The new DC inverter series don't need the MD-NIM01, connect to outdoor unit directly.

Multi-accessories

Description	T1, Duct		Tropical (T3), Duct		Floor-standing	
	Standard	Optional	Standard	Optional	Standard	Optional
Filter		√		√	√	
Outlet drainage	√		√		√	
EHK (Electric Heater Kits)		√		√		√
Three-phase protector		√		√		√
Wireless controller		√	√		√	
Wired controller	√			√		√
Centralized controller		√		√		√

Matchable Table

One drive one system



One drive two system



Silence technology ensures a quiet operating environment

To implement quieter running of IDU and ODU, we used advanced technologies such as CFD and FEM, researching the sources of component vibration in air conditioning systems and optimizing the fan's blades, resulting in an air conditioning unit that creates a more comfortable and harmonious work environment for customers.



- Newly-designed air guide ring
- Newly-designed air outlet grille
- Motor mount features a vibration-reduction design



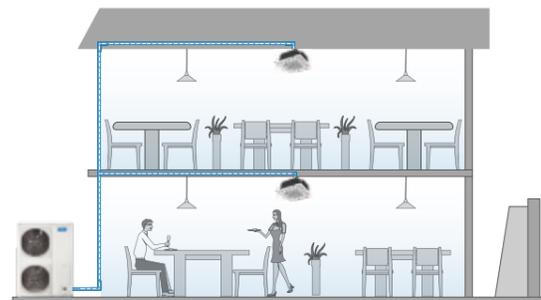
- New-generation DC inverter compressor with high performance and low noise
- Compressor soundproof enclosure processing
- Vibration-reduction design of 3D simulation pipe



- Large vibration-reduction axial fan
- Refrigerant flow muffling
- Vibration-reduction outer casing for outdoor unit

A long-pipe high-drop design allows flexible installation and optimizes space

A long-pipe high-drop design allows users to flexibly select the installation location, optimizing the use of space.



Maximum pipe length
70m

Maximum level difference between IDU and ODU
30m

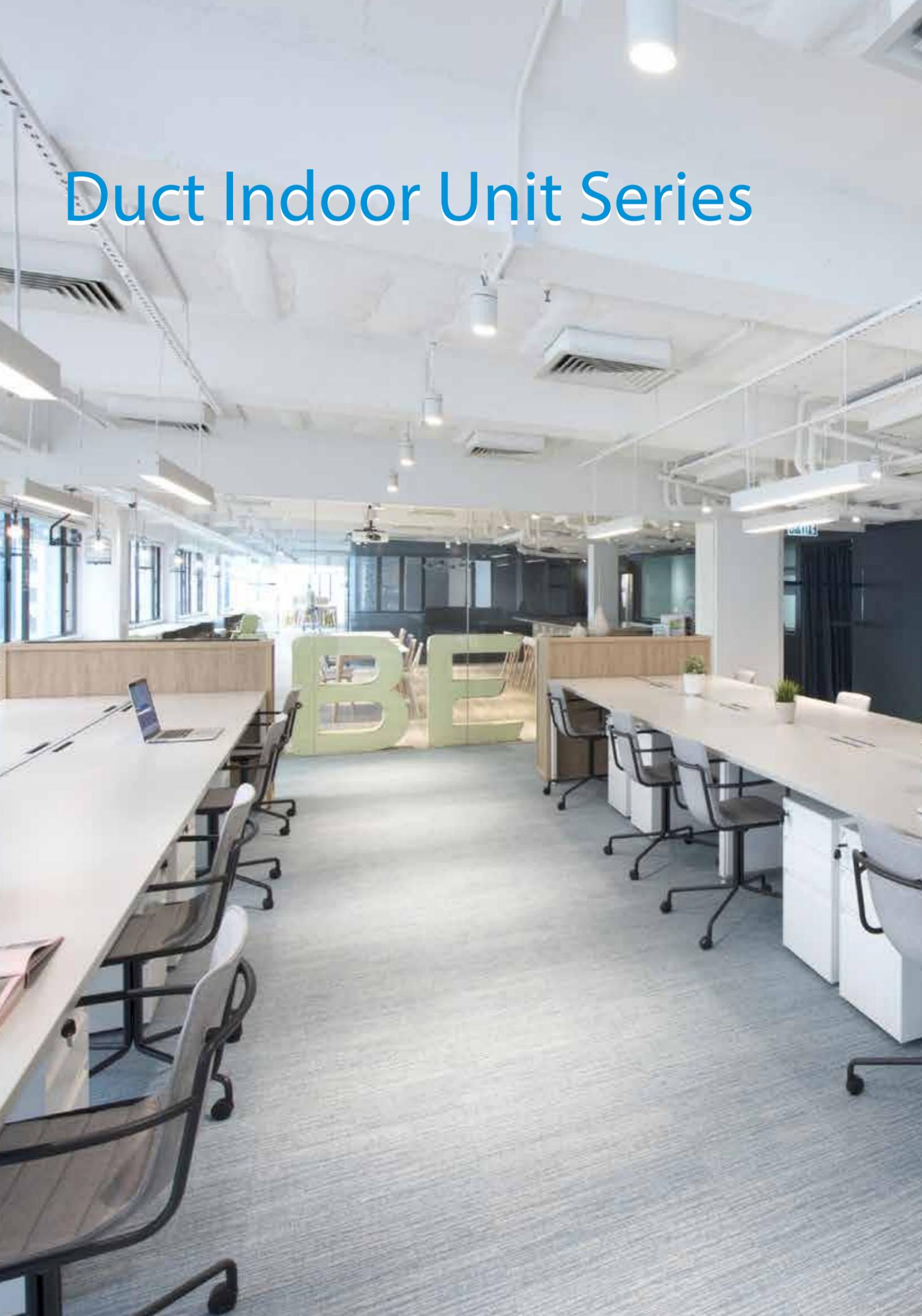
Creates a small footprint, saving installation space

The outdoor unit has a small footprint with only 0.333m² for a 8/10HP cooling only unit, which can significantly save installation space.



Takes up a small footprint

Duct Indoor Unit Series



Duct Indoor Unit

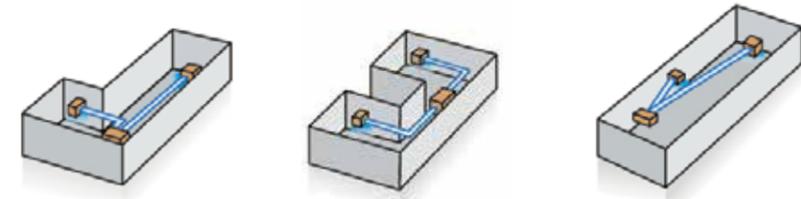


Convenient installation

- ❖ Compact design. Concealed installation without floor space requirement.
- ❖ Hidden in the ceiling, unit installation is not hindered by the location of lighting fixtures or room structure.
- ❖ Air inlet & outlet flange are standard for easy duct connection.
- ❖ Easy maintenance through the inspection port.

Free air duct design

- ❖ Multi diffusers from one indoor unit, air-conditioned multi rooms at the same time.
- ❖ Three speeds of air supply can be chosen via controller.
- ❖ The indoor unit is suitable for various applications where there are many rooms or halls, such as restaurant, concert halls and hotels.
- ❖ Flexible duct design for different room styles.



Auto Restart
Function



Auto
Defrosting



Independent
Dehumidification



Timer



PTC
Heater



Anti-Cold
Air Function



Wired
Controller

Specifications

T1 Application

Medium static pressure duct, heat pump



MTB-76HWN1
MTB-120HWN1

Indoor unit model			MTB-76HWN1	MTB-120HWN1
Outdoor unit model / Quantity			MOV-76HN1-R / 1	MOV-120HN1-R / 1
Indoor unit power supply			220-240V, 1Ph~, 50Hz	220-240V, 1Ph~, 50Hz
Cooling	Capacity	Btu/h	76,000	120,000
		kW	22.3	35.0
	Input	kW	7.5	11.9
	EER	W/W	2.97	2.94
Heating	Capacity	Btu/h	85,300	129,700
		kW	25.0	38.0
	Input	kW	8.3	12.7
COP	W/W	3.01	2.99	
Max. power input		W	1,300	2,000
Max. current		A	5.2	9.0
Air flow (Hi)		m³/h	4,250 (2,500CFM)	6,375 (3,750CFM)
Standard external static pressure		Pa	100	100
Noise level (Hi)		dB(A)	56	63
Fan	Type		Centrifugal	Centrifugal
	Drive type		Direct	Direct
Coil			Copper tube and aluminum fin	Copper tube and aluminum fin
Controller			Wired controller	Wired controller
Dimension	Net (WxHxD)	mm	1,452x462x797	1,452x462x797
	Packing (WxHxD)	mm	1,555x500x875	1,555x500x875
Net / Gross weight		kg	94 / 106	97 / 109

Notes:

- Cooling capacity test condition: Outdoor ambient temperature: 35°C, indoor temperature 27°C DB / 19°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
- Heating capacity test condition: Outdoor ambient temperature: 7°C DB / 6°C WB, indoor temperature 20°C DB / 15°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
- Specifications are subject to change without prior notice for product improvement.

Specifications



MOV-76HN1-R



MOV-120HN1-R

Outdoor unit model			MOV-76HN1-R	MOV-120HN1-R
Outdoor unit power supply			380-415V, 3Ph~, 50Hz	380-415V, 3Ph~, 50Hz
Max. power input		kW	11.7 (Outdoor unit)	17.3 (Outdoor unit)
Max. current		A	19.3 (Outdoor unit)	28.6 (Outdoor unit)
Air flow rate		m³/h	12,500	13,000
Noise level		dB(A)	68	69
Compressor (Type / Quantity)			Scroll / 1	Scroll / 1
Refrigerant (Type / Quantity)			R410A / 5.4kg	R410A / 7.5kg
Fan type / Drive type			Axial / Direct	Axial / Direct
Coil			Copper tube and aluminum fin	Copper tube and aluminum fin
Refrigerant piping size		mm	Φ9.52 (Liquid), Φ22 (Gas)	Φ12.7 (Liquid), Φ28.6 (Gas)
Ambient temperature	Cooling	°C	17~46	17~46
	Heating	°C	-7~24	-7~24
Dimension	Body (WxHxD)	mm	1,260x908x700	1,260x908x700
	Packing (WxHxD)	mm	1,320x1,060x730	1,320x1,060x730
Net / Gross weight		kg	174 / 193	201 / 217

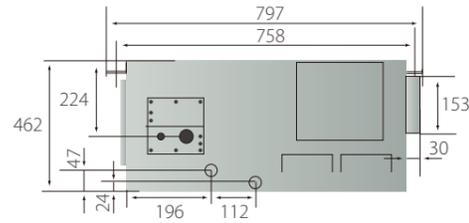
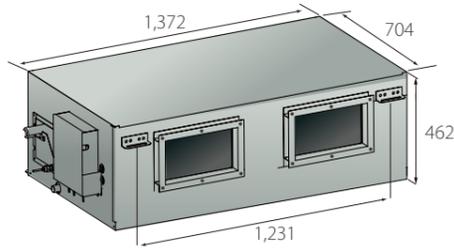
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- Heating capacity test condition: Outdoor ambient temperature: 7°C DB / 6°C WB, indoor temperature 20°C DB / 15°C WB; refrigerant pipe length between indoor unit and outdoor unit is 7.5m.
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Dimensions

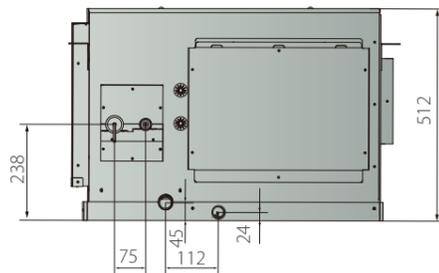
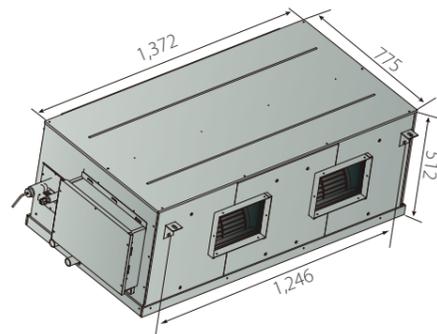
T1 application

Duct indoor unit: MTB-76HWN1, MTB-120HWN1, MHB-76HWN1, (Units: mm)



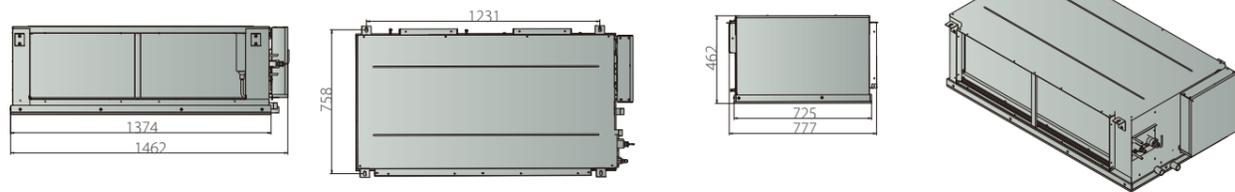
T1 application

Duct indoor unit: MHC1-76HWD1N1, MHC-75HWD1N1(A), MHC-96HWD1N1, MHC-96HWD1N1(A) (Units: mm)



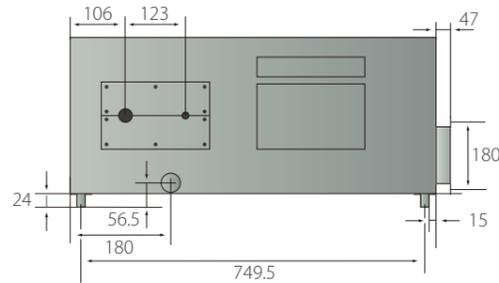
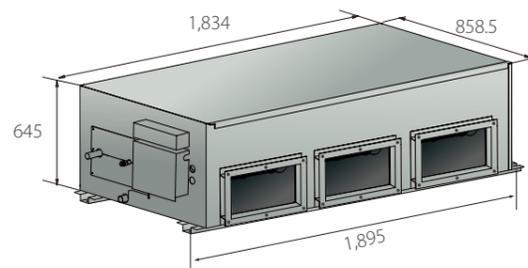
T1 application

Indoor unit: MHA-96HWN1, MTA-96HWN1, MHA-96CWDN1, MHA-76CWDN1, MTA-96CWDN1, MTA-76CWDN1, MHA-96CWDN1-V, MHA-76CWDN1-V, MTA-96CWDN1-V, MTA-76CWDN1-V (Units: mm)



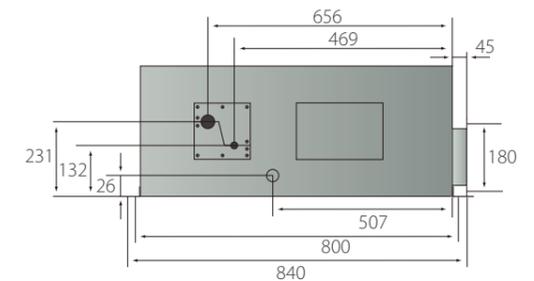
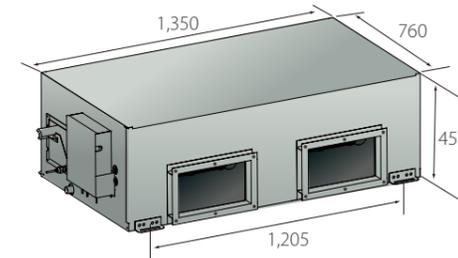
T1 application

Duct indoor unit: MHA-150HWN1, MHA-192HWN1 (Units: mm)



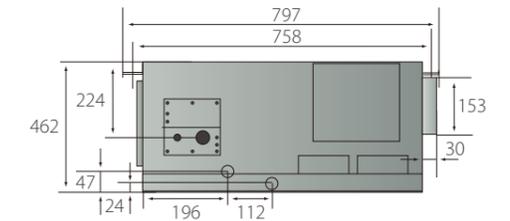
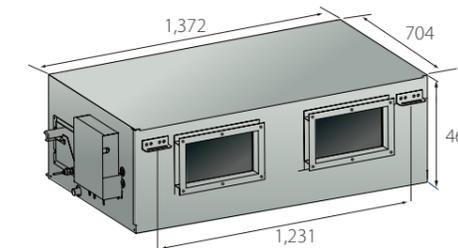
Tropical (T3) application

Duct indoor unit: MTA-76HRN1, MTA-76CRN1, MHB-76HRN1, MHB-76CRN1 (Units: mm)



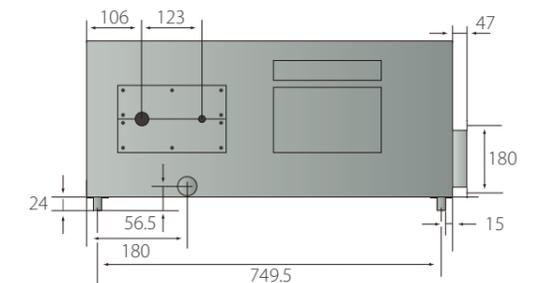
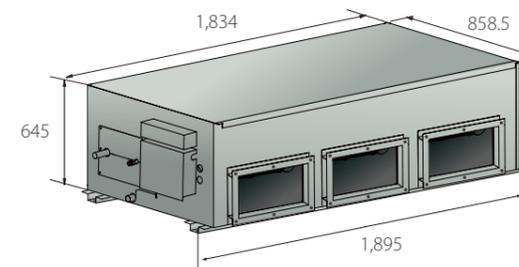
Tropical (T3) application

Duct indoor unit: MTB1T-96HWN1, MTB1T-96CWN1, MHB1T-96HWN1, MHB1T-96CWN1, MTA1-96CQN1 (Units: mm)



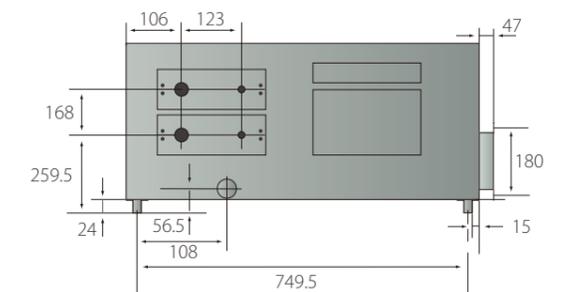
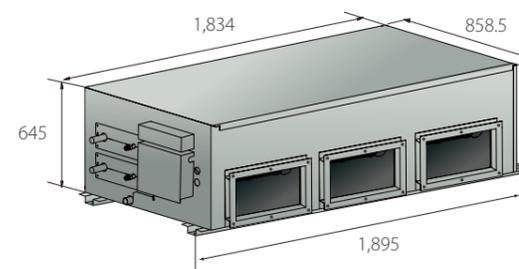
Tropical (T3) application

Duct indoor unit: MTA-120HRN1, MTA-120CRN1, MTA1-120CQN1 (Units: mm)

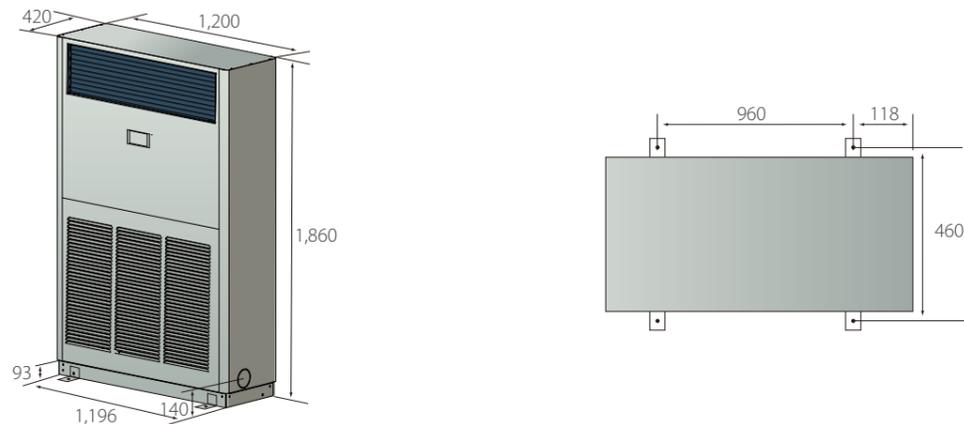


Tropical (T3) application

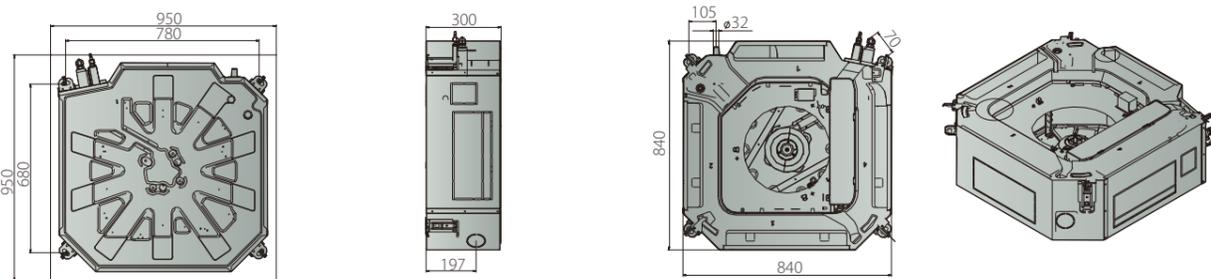
Duct indoor unit: MTA-150CRN1, MTA1-180CQN1, MTA1-240CQN1 (Units: mm)



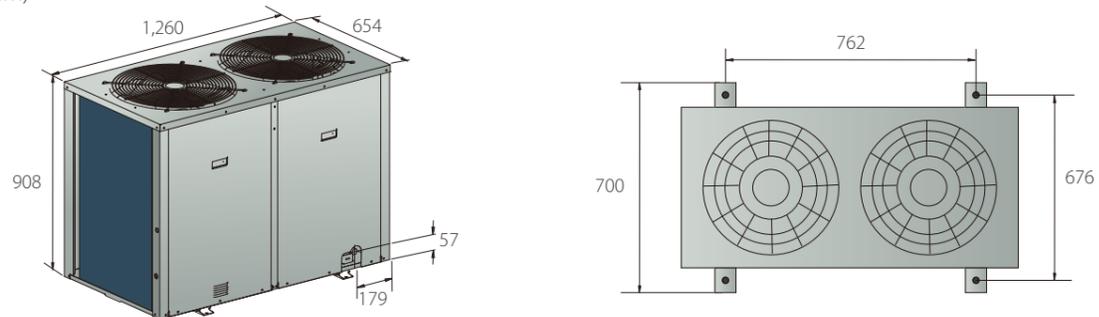
T1 & Tropical (T3) application
 Floor-standing indoor unit: MFA2-76HRN1, MFA-76HRN1, MFA-76CRN1,
 MFA3T-96HRN1, MFA3T-96CRN1, MFA-96HWAN1-R, MFA1-96CRN1, MFAT-120CRN1, MFA-96CRDN1, MFA-76CRDN1,
 MFA-96CRDN1-V, MFA-76CRDN1-V
 (Units: mm)



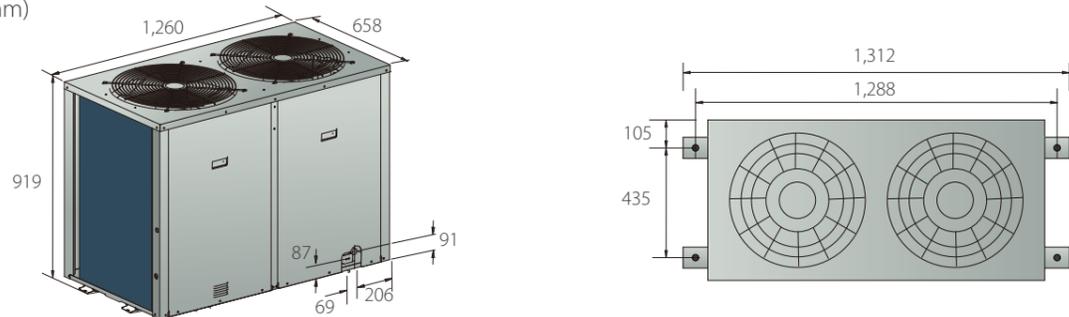
T1 application
 Indoor unit: MQ4A-48HWAN1, MQ4A-48CRDN1, MQ4A-38CRDN1, MQ4A-48CRDN1-V, MQ4A-38CRDN1-V
 (Units: mm)



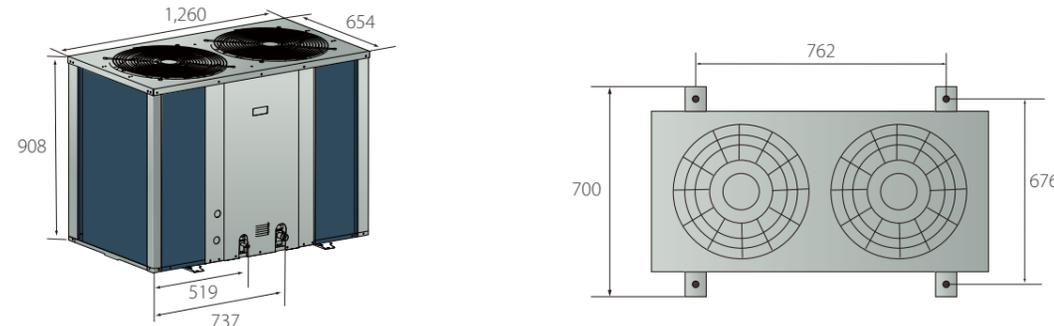
T1 & Tropical (T3) application
 Outdoor unit: MOV-76HN1-R, MOV-76HN1-C, MOV-76CN1-C
 (Units: mm)



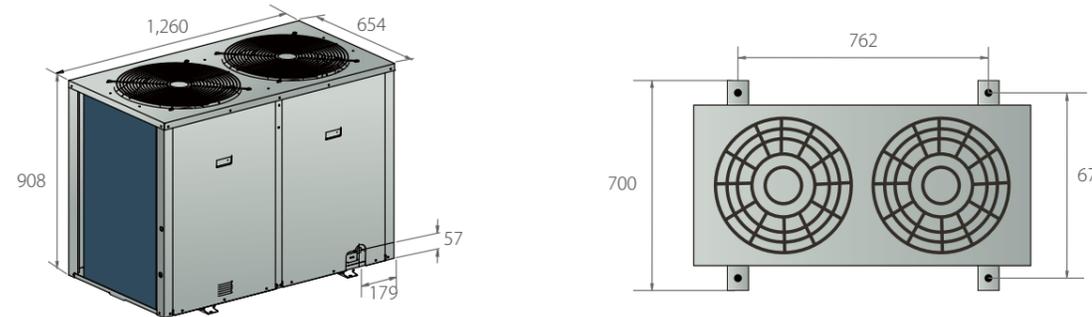
T1 & Tropical (T3) application
 Outdoor unit: MOVTA-96HN1-R, MOVTA-96CN1-R
 (Units: mm)



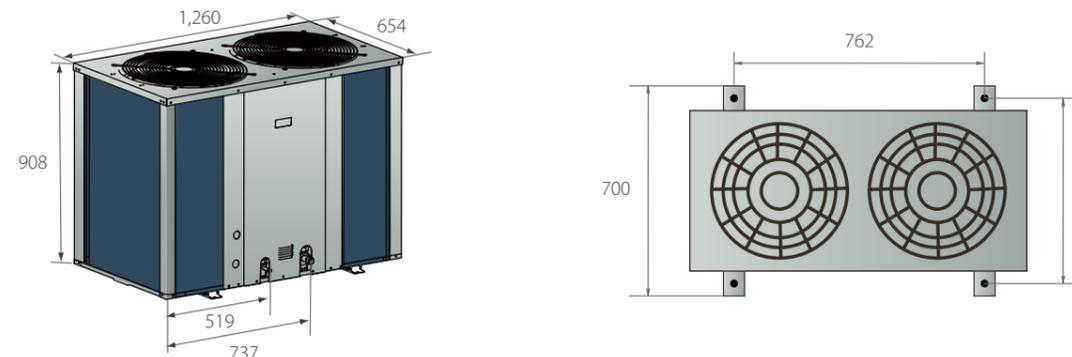
T1 & Tropical (T3) application
 Outdoor unit: MOV-120HN1-R, MOV-120HN1-C, MOV-120CN1-C
 (Units: mm)



T3 application, 208~230V/380V 3Ph~ 60Hz
 Outdoor unit: MOV-96CN1-X
 (Units: mm)



T3 application, 208~230V/380V 3Ph~ 60Hz
 Outdoor unit: MOV-120CN1-X
 (Units: mm)



T1 application
 Outdoor unit: MOUA-96HD1N1-R, MOUB-96HD1N1-R
 (Units: mm)

